

Boğaziçi Math Seminar

Hamilton Cycles in Graphs

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Abstract:

A Hamilton cycle is one of the most basic global structures one might wish to find in a graph. It is a cycle that visits every vertex of the graph exactly once, making it a structure of interest in problems such as the famous Traveling Salesman Problem.

Determining whether a given graph has a Hamilton cycle is, in general, an NP-complete problem. Consequently, a significant body of research has focused on identifying conditions that guarantee the existence of Hamilton cycles. In this talk, I will discuss several key results connecting Hamiltonicity to degree conditions, connectivity, and spectral properties of a graph. I will conclude by presenting our recent resolution of Jackson's conjecture from 1981, which states that every d -regular oriented graph on n vertices has a Hamilton cycle, provided that d is at least $n/4$.

Date : Wednesday, February 19, 2025

Time: 13:30

Place: TB 130, Boğaziçi University